

# Monthly Marine Biotoxin Report

January 2007

Technical Report No. 07-11

## INTRODUCTION:

This report provides a summary of biotoxin activity for the month of January, 2007. Ranges of toxin concentrations are provided for the paralytic shellfish poisoning (PSP) toxins and for domoic acid (DA). Estimates are also provided for the distribution and relative abundance of *Alexandrium*, the dinoflagellate that produces PSP toxins, and *Pseudo-nitzschia*, the diatom that produces domoic acid. Summary information is also provided for any quarantine or health advisory that was in effect during the reporting period.

Please note the following conventions for the phytoplankton and shellfish biotoxin distribution maps: (i) All estimates for phytoplankton relative abundance are qualitative, based on sampling effort and percent composition; (ii) All toxin data are for mussel samples, unless otherwise noted; (iii) All samples are assayed for PSP toxins; DA analyses are performed as needed (i.e., on the basis of detected blooms of the diatoms that produce DA); (iv) Please refer to the appropriate figure key for an explanation of the symbols used on the maps.

### Southern California Summary:

#### Paralytic Shellfish Poisoning

*Alexandrium* was observed at sites primarily between San Luis Obispo and Ventura counties during January, with an isolated

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Figure 1. Distribution of toxin-producing phytoplankton in Southern California during January, 2007.

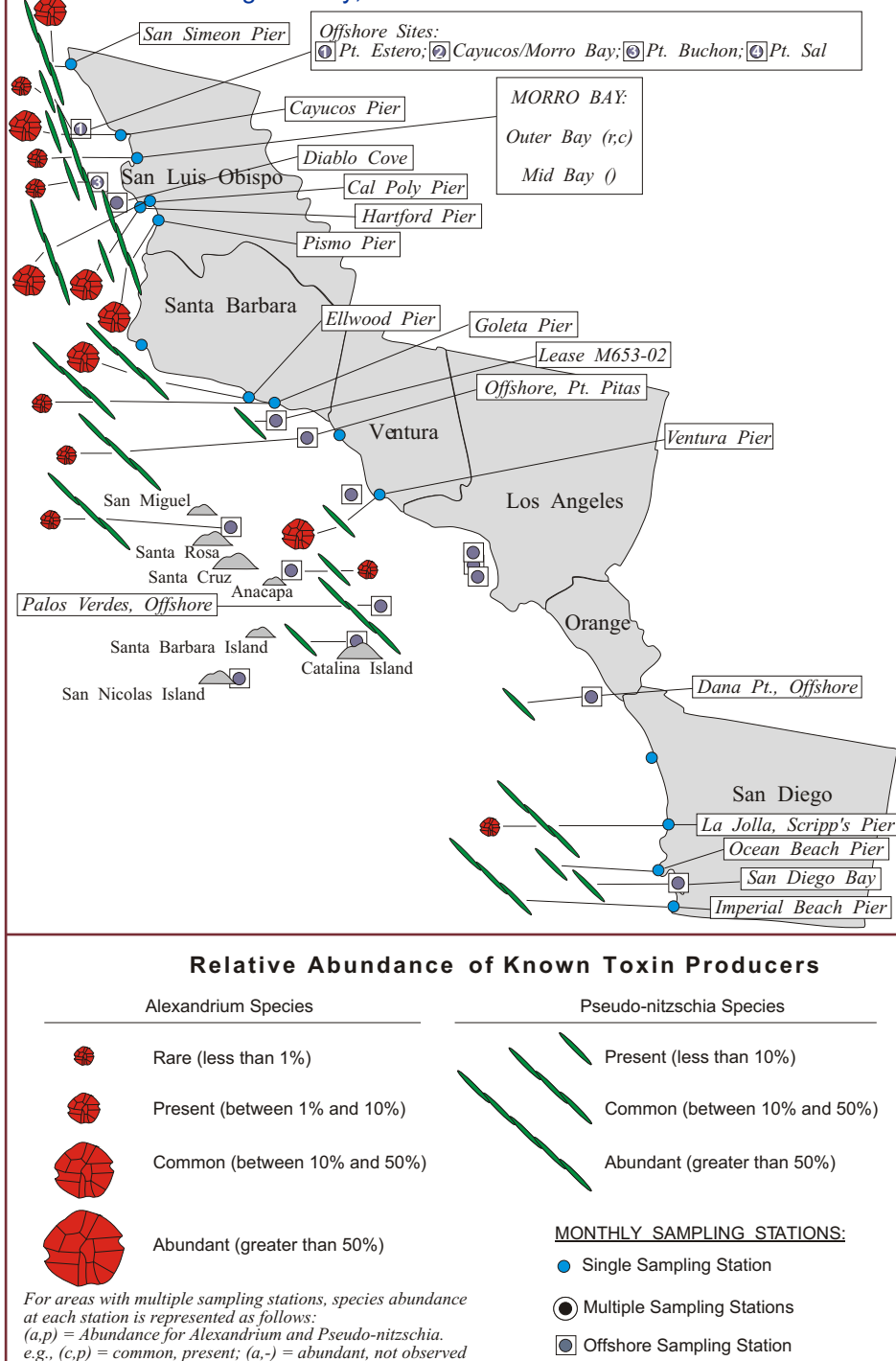
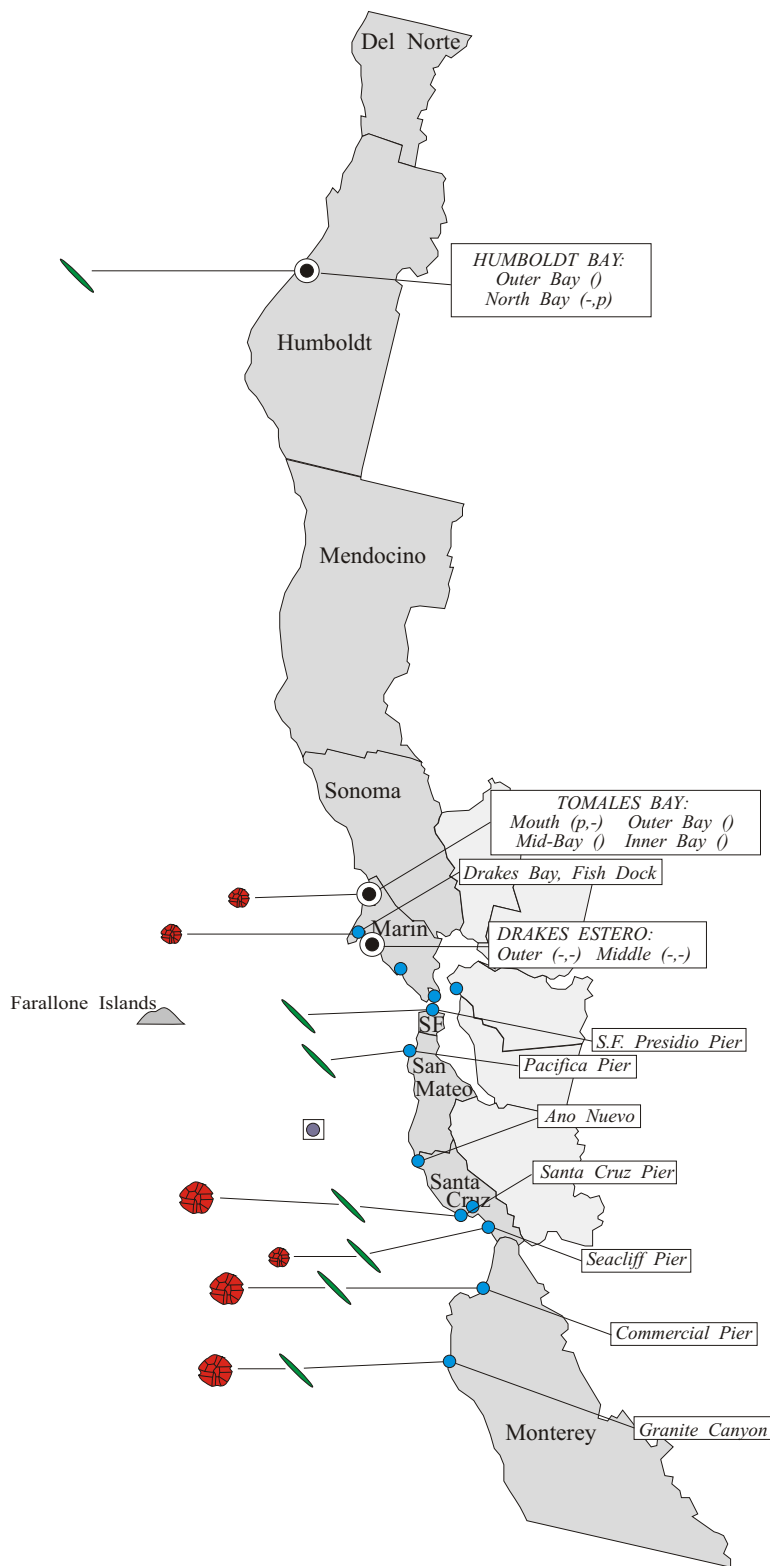


Figure 2. Distribution of toxin-producing phytoplankton in Northern California during January, 2007.



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observation in San Diego County (Figure 1). The distribution and relative abundance of this dinoflagellate was reduced compared to observations in December. *Alexandrium* was observed offshore near Santa Cruz and Santa Rosa islands as well. Overall the cell numbers were low in all areas. This marks the 11th consecutive month that *Alexandrium* has been observed along a significant portion of the Southern California coast.

Low concentrations of PSP toxins continued to be detected in mussels from several sites along the San Luis Obispo coast throughout the month. By January 23 the PSP toxin concentration had increased to 153 ug/100g tissue in mussels from Avila, reaching 282 ug by January 29 (Figure 3). Low levels of these toxins were also detected in mussels offshore of Santa Barbara and in samples of lobster viscera collected along the Ventura coast and offshore near Anacapa Island.

#### Domoic Acid

*Pseudo-nitzschia* continued to be observed along the entire Southern California coast in January (Figure 1). The distribution was similar to observations in December, although cell densities were low at most sites. The highest relative abundances were observed at Scripps Pier (San Diego County) and consisted of both toxic and non-toxic species. Elevated levels of domoic acid were

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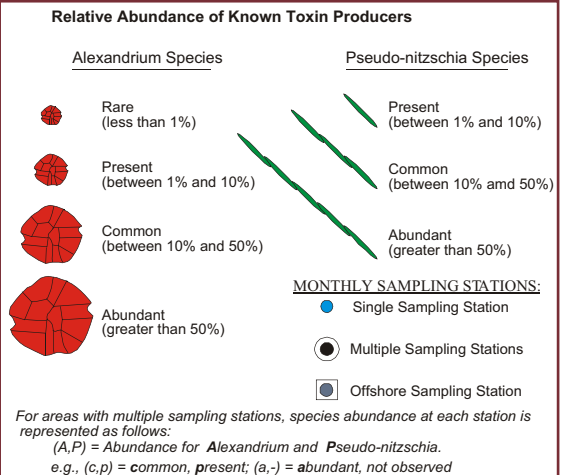
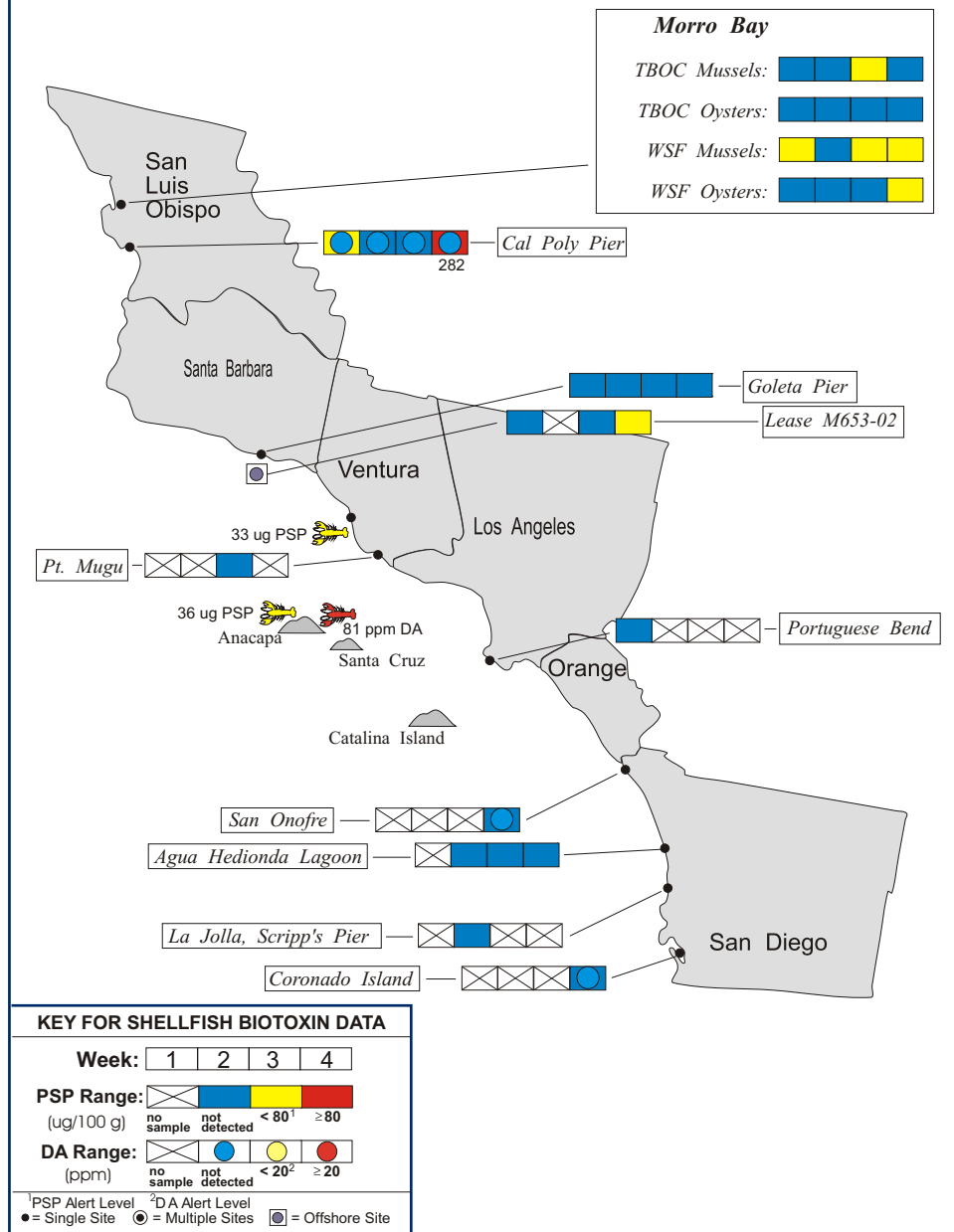


Figure 3. Distribution of shellfish biotoxins in Southern California during January, 2007.



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detected in a sample of lobster viscera collected from near Anacapa Island on January 2 (81 ppm).

#### Non-toxic Species

The Southern California coast was dominated by detritus and variety of species of diatoms. The most common diatom observed included *Chaetoceros*, *Skeletonema* and *Thalassiosira*. Dinoflagellates were common in some areas, with *Akashiwo* and *Cochlodinium* occurring at sites in Santa Barbara and Ventura.

#### Northern California Summary:

##### Paralytic Shellfish Poisoning

The distribution of *Alexandrium* in January was slightly increased compared to observations in December (Figure 2). This dinoflagellate continued to be observed in low numbers at sites in Marin, Santa Cruz, and Monterey counties.

Low levels of PSP toxins were detected in sentinel mussels from Drakes Estero and the Santa Cruz Pier at the end of the month (Figure 4).

##### Domoic Acid

The distribution of *Pseudo-nitzschia* was similar to observations in December, with

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The Marine Biotoxin Monitoring and Control Program, managed by the California Department of Health Services, is a state-wide effort involving a consortium of volunteer participants. The shellfish sampling and analysis element of this program is intended to provide an early warning of shellfish toxicity by routinely assessing coastal resources for the presence of paralytic shellfish poisoning (PSP) toxins and domoic acid.

The Phytoplankton Monitoring Program is a state-wide program designed to detect toxin producing species of phytoplankton in ocean water before they impact the public. The phytoplankton monitoring and observation effort can provide an advanced warning of a potential toxic bloom, allowing us to focus sampling efforts in the affected area before California's valuable shellfish resources or the public health is threatened.

For More Information Please Call:  
(510) 412-4635

For Recorded Biotoxin Information Call:  
(800) 553-4133

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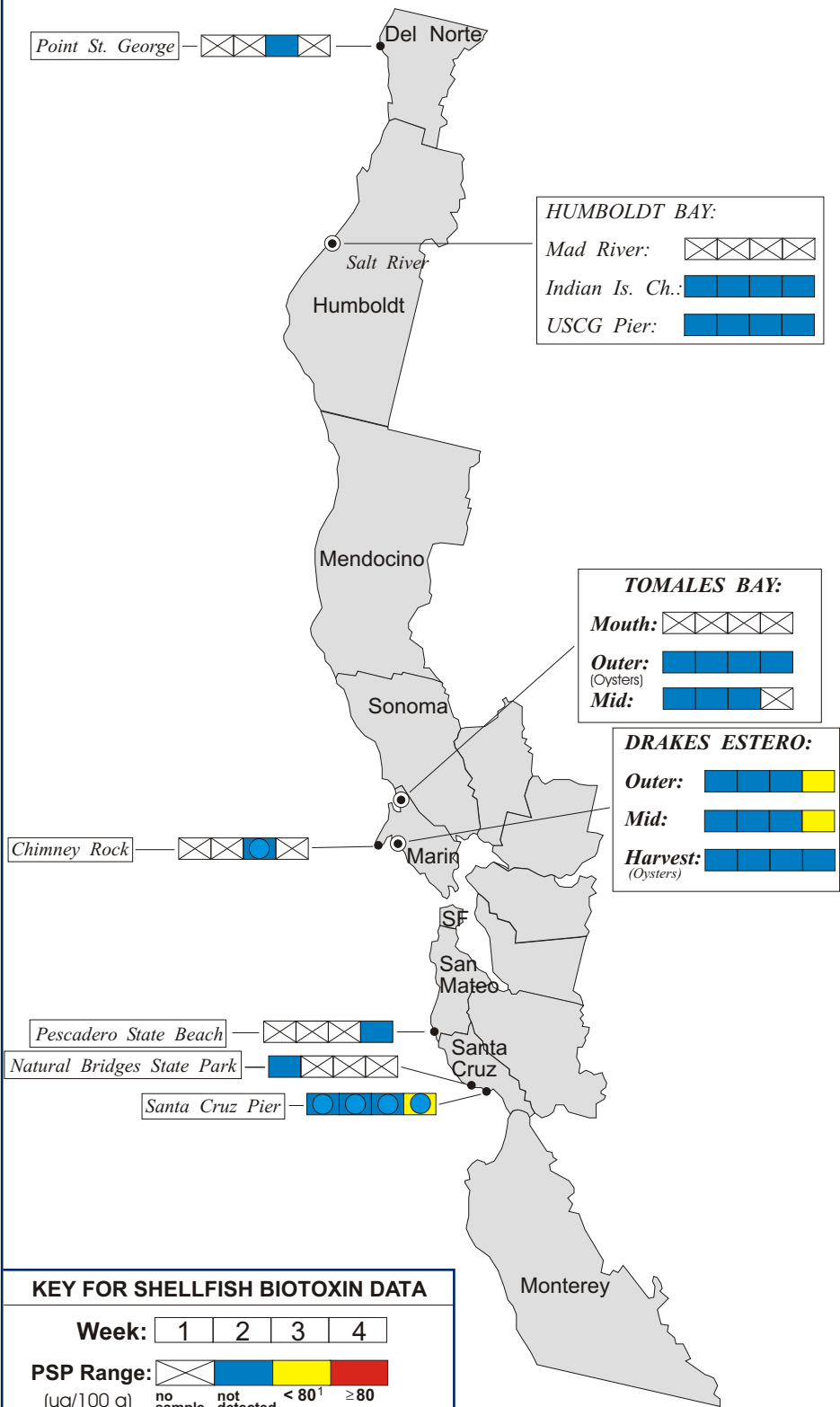
the added observation of low numbers of this diatom in Humboldt Bay (Figure 2). Domoic acid was not detected in any shellfish samples collected in January.

Non-toxic Species

As with Southern California, detritus and diatoms dominated the Northern California coast. In contrast, there was a greater diversity of diatom species in Northern California. *Chaetoceros*, *Skeletonema*, *Thalassiosira*, and a variety of centric species were common in January. The dinoflagellates *Prorocentrum* and *Akashiwo* were common at sites inside Monterey Bay. *Prorocentrum* was also common inside Bolinas Lagoon in January.



Figure 4. Distribution of shellfish biotoxins in Northern California during January, 2007.



QUARANTINES:

There were no quarantines in effect in January. The annual mussel quarantine normally goes into effect on May 1 of each year and applies only to sport-harvested

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Table 1. California Marine Biotoxin Monitoring Program participants submitting shellfish samples during January, 2007.

COUNTY	AGENCY	# SAMPLES
Del Norte	Del Norte County Health Department	1
Humboldt	Coast Seafood Company	10
Mendocino	None Submitted	
Sonoma	None Submitted	
Marin	Cove Mussel Company	3
	Drakes Bay Oyster Company	20
	Hog Island Oyster Company	4
	CDHS Marine Biotoxin Monitoring Program	1
	Marin Oyster Company	2
	San Francisco	None Submitted
San Mateo	San Mateo County Environmental Health Department	1
Santa Cruz	U.C. Santa Cruz	5
	Santa Cruz County Environmental Health Department	1
Monterey	None Submitted	
San Luis Obispo	Cal Poly	5
	Tomales Bay Oyster Company	6
	Williams Shellfish Farms	10
Santa Barbara	CDHS Volunteer (Bill Weinerth)	1
	Santa Barbara Mariculture Company	8
	U.C. Santa Barbara	4
Ventura	CDHS Volunteer (Bill Weinerth)	1
	Naval Air Station, Pt. Mugu	1
Los Angeles	Los Angeles County Health Department	2
Orange	None Submitted	
San Diego	Carlsbad Aquafarms, Inc.	3
	CDHS Volunteer (Steve Crooke)	2
	Scripps Institute of Oceanography	1

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mussels along the entire California coastline, including all bays and estuaries. Routine biotoxin monitoring is maintained throughout this period. The annual quarantine does not affect the certified commercial shellfish growing areas in California. All certified shellfish growers are required to submit at least weekly samples of shellfish for toxin monitoring. Harvest restrictions or closures are implemented as needed to protect the public's health.

Consumers of Washington clams, also known as butter clams, are cautioned to eat only the white meat. Washington clams can concentrate the PSP toxins in the viscera and in the dark parts of the siphon and can remain toxic for a long period of time. Persons taking scallops or clams, with the exception of razor clams, are advised to remove and discard the dark parts (i.e., the digestive organs or viscera). Razor clams are an exception to this general guidance due to their ability to concentrate and retain domoic acid in the edible white meat.

Consumers are also advised that cooking does not eliminate the toxins from the shellfish tissue. Sport harvesters are encouraged to contact the "Biotoxin Information Line" at 1-800-553-4133 for a current update on marine biotoxin activity prior to gathering and consuming shellfish.

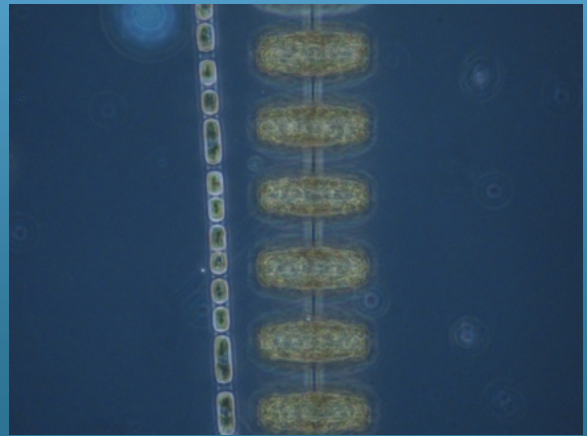




Table 2. Agencies, organizations and volunteers participating in marine phytoplankton sample collection during January, 2007.

COUNTY	AGENCY	# SAMPLES
Del Norte	None Submitted	
Humboldt	Coast Seafood Company	5
Mendocino	None Submitted	
Sonoma	Cordell Banks National Marine Sanctuary	1
	CDHS Volunteer (Cathleen Cannon)	1
Marin	Audubon California	3
	CDHS Volunteers (Brent Anderson, Cal Strobel,	7
	Drakes Bay Oyster Company	11
	CDHS Marine Biotxin Monitoring Program	1
San Francisco	CDHS Volunteer (Eugenia McNaughton)	4
San Mateo	San Mateo County Environmental Health	1
	The Marine Mammal Center (Stan Jensen)	5
Santa Cruz	The Marine Mammal Center (Nancy Scarborough)	2
	U.C. Santa Cruz	5
	Santa Cruz County Environmental Health	3
Monterey	CDHS Volunteer (Jerry Norton)	1
	Marine Pollution Studies Laboratory	4
San Luis Obispo	CDHS Volunteer (Renee and Auburn Atkins)	3
	Cal Poly	5
	Monterey Bay National Marine Sanctuary	3
	Morro Bay National Estuary Program	3
	Tenera Environmental	1
	The Marine Mammal Center (Debbie Davis, P.J.)	8
Santa Barbara	CDHS Volunteer (Sylvia Short)	6
	National Park Service	4
	Santa Barbara Channel Keeper	3
	Santa Barbara Mariculture Company	4
	U.C. Santa Barbara	4
	CDHS Volunteer (Fred Burgess)	5
	Channel Islands National Marine Sanctuary	2
Los Angeles	Los Angeles County Sanitation District	4
	Catalina Island Marine Institute	2
Orange	Ocean Institute	2
San Diego	Avian Research Associates	1
	CDHS Volunteer (Paul Sims)	3
	Scripps Institute of Oceanography	4

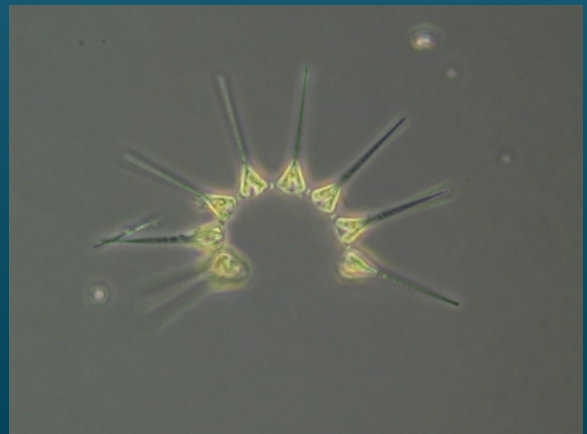
## PHYTOPLANKTON GALLERY



*The diatoms Skeletonema and Thalassiosira were common along much of the California coast.*



*Chains of the diatom Odontella are often common at sites inside Drakes Bay.*



*The diatom Asterionella was observed at a number of locations in January.*